6.0 Case Studies of Nursing Facility Staffing Issues and Quality of Care[1]

6.1 Background

The results of the Phase 1 and Phase 2 quantitative analyses provide compelling evidence linking staffing levels to the quality of care provided to residents.[1-5] The findings indicate that there are specific staffing ratios for different types of staff that are associated with higher quality of care in nursing facilities for both the short-stay and long-stay populations. These results were based on secondary data analyses that relied on Medicare Claims data and MDS data to assess quality, and Medicaid Cost Report data to measure staffing. With secondary data sources it was not possible to study how factors other than overall staffing ratios might influence quality of care. These qualitative case studies were designed to investigate relationships between quality of care provided to individual residents and staffing levels as well as other factors relating to nurse staffing.

Staffing ratios are only a part of the complex relationship between staffing and quality of nursing home care. Other aspects of the relationship, such as staff allocation among units and shifts, staff knowledge and training, staff supervision, and management practices are not easily quantified. The objective of these qualitative case studies was to understand the ways in which these different attributes of staffing influence the quality of nursing home care. Those attributes that appear to be very influential ought to be considered in the context of staffing regulations and investigations of staffing issues in nursing homes.

6.2 Methods

6.2.1 Overview of Data Collection and Analysis

The study team conducted site visits to seventeen nursing facilities in three states: Ohio, Colorado and Texas. During the site visits, study nurses investigated the quality of care provided to individual residents in relation to each of the following staffing issues:

- Staffing levels on different shifts,
- Staffing levels on different units,
- Short staffing,
- Staff working double shifts,
- Use of contract staff,

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- Nursing staff supervision and management,
- Staff knowledge, skills and expertise, and
- Staff development and training.

A balance was struck between structured collection of information and unstructured observation. Data collection instruments and questionnaires were designed to collect data in a systematic manner, yet allow the study nurses sufficient freedom to organize their investigation as dictated by circumstances in the visited nursing facilities. They recorded their observations of care for specific residents. The study nurses then used their professional knowledge and long-term care experience to interpret their observations and provide summary evaluations of both the quality of care delivered, and the staffing issues at the nursing facility they observed. Members of the research team then synthesized these observations and evaluations into specific staffing issues.

6.2.2 The Study Nurses

Three study nurses were recruited for on-site data collection, one for each of the three states. The research team's objective was to find data collectors who would be able to independently evaluate quality of nursing care and relate it to staffing issues in a nursing facility. Therefore, it was imperative to find nurses with substantial professional experience in the nursing home setting. In addition, since case studies rely heavily on observation and interviews, it was imperative that the nurses would be able to comfortably use these data collection techniques. Initially, we sought data collectors with a professional background in a nursing facility and background or experience in qualitative research. When this proved unsuccessful in some cases, we sought nurses with professional experience in the nursing home setting who had a personality amenable to qualitative research. We looked for the ability to establish easy rapport with people, good observation skills, and a willingness to be persistent in uncovering information from informants while not alienating them. One of the three nurses combined all qualifications including both nursing facility experience and a background and experience in qualitative research. The other two were registered nurses with work experience in nursing facilities, who had the required inter-personal skills.

These three nurses received a one-week training in Denver in February of 2001. The training consisted of instruction in the data collection protocols. In addition, they were given an introduction to qualitative research techniques, taught by J.K Magilvy, PH.D., R.N., F.A.A.N, Professor of Nursing, and J.G. Congdon, Ph.D., R.N., Associate Professor of Nursing at the University of Colorado Health Science Center in Denver, Colorado. Both conducted extensive qualitative research in long-term care including ethnographic field studies in nursing homes. The protocols were easily understood by the data collectors, but considerable emphasis was placed on the particular techniques of qualitative research. The two guest instructors spent additional time with the trainees to further explain and role-play observation and interview techniques. As part of the training the study nurses were taken for one and half days to a local nursing home in order to practice their skills and familiarize themselves with the data collection protocols.

6.2.3 Nursing Facility Selection and Recruitment

The state selection was based to some extent on whether states participated in the quantitative analysis and also by the search for qualified study nurses. We knew a qualified nurse data collector who could work in Ohio, were readily able to recruit a person in Colorado, and Texas was the first of several states under consideration where we found a qualified person.

One objective in the selection of nursing facilities was to include facilities with a range of staffing levels, based on Oscar data. Other facility characteristics that were considered included: urban/rural location, hospital-based vs. freestanding, and for profit vs. non-profit ownership. The seventeen visited nursing facilities had the following characteristics: two hospital-based facilities (15 free standing); eleven for-profit facilities (6 non-profit); two rural facilities (15 urban).

In each state, twenty facilities were randomly selected so that we could begin recruiting from a large pool. Each of the twenty nursing facilities was initially contacted by telephone by a research nurse from the UCHSC. During the initial conversation, most often with the facility administrator, issues of confidentiality, the facility selection process and data issues were discussed. During this initial contact, the research nurse emphasized that: 1) the nursing facility was selected from a number of eligible facilities on a random basis; 2) the facility's identity would be protected in all documentation; 3) the data collection would be conducted by one nurse with experience in nursing facilities; and 4) the duration of the data collection period if the nursing facility were to participate would be between six to ten days.

At this stage, eight nursing facilities declined to participate any further. A follow-up fax was sent to all nursing facilities that agreed to be considered. The research nurse contacted the nursing facilities again a few days to a week later to answer any questions and elicit a response. Several repeat phone calls were made to a nursing facility if no contact could be made with the administrator at this time. When required, a letter from CMS that strongly encouraged participation was sent to the facility. In Texas, where refusal rates were high, the state agency also made contact with selected facilities endorsing their participation. In the end, twenty-nine nursing facilities refused to participate or failed to respond, including nine from Ohio, eight from Colorado, and twelve from Texas.

The facilities were not aware until just before the visit whether they would be included in the study, nor the exact dates they might be visited. The general time frame in which the study would take place and the name of the study nurse was divulged at the time a nursing facility agreed to participate. A nursing facility was then informed that the study nurse would contact the facility one or two days prior to arrival, if the facility was selected for a visit. The study nurses received the name and location of the nursing facility selected for their next visit a few days to a week before their anticipated visit. This procedure was established in order to keep an element of surprise and avoid special preparation on the part of the facilities.

Table 6.1
Quality Area Sets

Set #	Quality Area	Sample Population
Set 1	Rehospitalization	Admission
	Functional assistance with Toileting	Long-Stay
	Incident Pressure Ulcers	Long-Stay
Set 2	Rehospitalization	Admission
	Functional assistance with Eating	Long-Stay
	Significant Weight Loss	Long-Stay
Set 3	Rehospitalization	Admission
	Resisting care	Long-Stay
	Unclean / Ungroomed	Long-Stay
Set 4	Rehospitalization	Admission
	Significant Weight Loss	Long-Stay
	Incident Pressure Ulcers	Long-Stay

Resident Selection

In each facility, the study nurses identified the particular units in operation at the time of the site visit and then selected a maximum of three units: if possible a long-term care unit, a Medicare/sub-acute unit, and an Alzheimer/dementia unit. If more than one unit of a particular type was in operation, the study nurse selected the unit with the highest resident census. On each selected unit, lists of twenty eligible residents were generated for either the Admission Sample or Long-Stay Sample. The Admission Sample list, compiled for the Medicare/sub-acute units, was restricted to those residents who were admitted to the nursing facility in the past 120 days from an acute care facility. The Long-Stay Sample list was compiled for each of the remaining long-term care units consisting of residents who had resided in the nursing facility for more than 120 days. Based on the quality areas set chosen for that facility, different resident selection criteria were applied.

For each selected quality area, residents were classified into an 'at-risk' category or a 'treatment' category. An at-risk resident was one whose condition placed him/her at an increased risk for developing a negative outcome. A treatment resident was one who had the condition pertaining to the quality area, and was receiving care for this condition. The study nurses obtained information regarding the criteria through individual record review, staff interviews and resident observations. The final selection of two residents on each unit, from those meeting the quality area criteria was determined by the study nurses, such that residents at greatest risk for quality problems were sampled in each quality area (see Appendix D).

Case Study Protocol Summary

The study nurses spent between six and ten days in each of the visited nursing facilities. These days were spent either consecutively or with several days separation. The duration of the on-site visit varied between six to ten days for several reasons: 1) the resident census and

the number of units varied among nursing facilities; 2) the nurses were at liberty to organize their days according to the needs of the facility and their own personal needs; 3) sometimes they stayed through multiple shifts and conducted the reviews in more concentrated days. The study nurses spent time on each of the selected units during three shifts (day, evening, weekend), with a maximum of nine shifts in each facility. The night shift was observed during either the early morning or late evening hours.

Almost all of the visited facilities accommodated the study nurses for the full stay. Only one Texas facility objected to the duration of the data collection once the study nurse had arrived on-site. Fortunately, the study nurse was informed about the facility's expectations for a relatively short stay at the onset of her stay. The study nurse focused her attention on one particular unit only and selected two residents. The sub-acute unit was chosen in this facility and data collection focused on the two case study residents on this particular unit.

The data collection in each of the visited facilities consisted of a review of individual resident records, general and resident-specific observations, and staff interviews. Resident interviews were not mandated but the study nurses were free to interview residents if they deemed this necessary and feasible.

An individual resident record review for each of the case study residents assisted the study nurses in targeting particular care areas for further investigation. For each case study resident, the study nurses selected a minimum of three nursing care practices for observation. These resident-specific observations were conducted during the three shifts that the study nurse spent on a unit. In addition, the study nurses made general observations during these times including the administration of preventive care such as repositioning and toileting of residents, the response time to call lights, and the interactions among staff and between staff and residents. The general observations were not restricted to the case study residents, but included any resident present on the unit during the time of observation. Brief interviews were conducted with all direct care nursing staff present on the unit during the observation shift, in order to obtain information regarding work assignments, number of hours worked, tenure etc. In-depth interviews were conducted with the direct care nursing staff observed during the administration of care to the case study residents focusing on their knowledge and familiarity with the resident's care. Additional interviews were conducted with management staff and administrative staff to understand policies, procedures, management approaches, and supervisory roles.

6.2.5 Analysis

The collected materials were delivered to the UCHSC for analysis. Initial data abstraction concentrated on observational data relating the care received by a particular resident to the prevailing staffing conditions at the time. Examples of both poor and good quality were related to staffing issues. This initial review pertained primarily to the care received by the residents selected for the case studies, but other residents appeared in these observations as well.

The findings for each site were recorded in a table format organized by staffing issues. Facilities and case study residents appear under their study identification number, other residents were simply referred to as 'a resident' or were identified under a combination of the letters X and/or Y.

The process of relating quality of care to particular staffing variables required some interpretation. A quality of care issue could sometimes be related to more than one staffing variable. For instance, insufficient toileting could be related to low staffing levels and/or inadequate supervision. At this phase, data from staff interviews were incorporated in the tables, which added to and sometimes clarified the relationship between quality of care and staffing issues.

The three study nurses were consulted and each reviewed the completed tables with respect to the postulated relationship between quality and staffing for the nursing facilities they visited. Their comments and insights were incorporated into the existing tables. The tables were then reviewed for emerging patterns, which are reflected in the following section.

6.3 Findings

6.3.1 Staffing Levels

The staffing ratios for direct care nursing staff allocated to specific units during specific shifts were compiled by the study nurses during the site visit. The ratios represent actual ratios at the times of observation and thus reflect situations of both 'normal' staffing, when a unit is staffed with the usual number of nursing staff and 'short staffing', when a unit is staffed with fewer than the routinely assigned nursing staff. Nursing staff ratios varied, as expected, per shift and per unit and with acuity level. The variation in staffing ratios for licensed nursing staff was far greater than that for nursing assistants. While the ratios for nursing assistants fluctuated from 1:3 to 1:27, the variation in ratios for RNs, LPNs and Certified Medication Assistants (CMAs) was 1:6 to 1:49 residents. The extremes on the higher end of the spectrum, for nursing assistants 1:3 and for nurses 1:6, reflected staffing situations on the Medicare/ sub-acute units. The lower end of the spectrum, especially for nursing assistants, reflected situations when units were staffed below their routine levels.

Staffing levels for licensed nursing staff under routine or 'normal' circumstances appeared at times insufficient. Floor nurses frequently had multiple responsibilities, such as clinical assignment that included medication passes and treatments in addition to administrative and supervisory tasks. Managerial staff assigned to the units at times expressed being overburdened and unable to take care of all their responsibilities. This was confirmed by many observations in different nursing facilities. Nurses frequently seemed more focused on getting their paperwork done or getting the medication administered than on responding to residents' needs as they arose. In some instances, resident care suffered directly as the nurse chose or could not respond to clear indications of resident or staff needs. More often though, supervisory responsibilities suffered, at times indirectly affecting resident care.

The following two examples illustrate how the quality of resident care was negatively affected when the licensed nursing staff was or felt unable to provide supervision in addition to their clinical or administrative assignments. By making the choice to ignore their supervisory responsibilities, the quality of care was indirectly affected.

> *Observation on the long-term care unit with designated sub-acute care beds reveals that repositioning of the residents is insufficient on the evening shift. The nursing assistants on the evening shift have tenure between one day to eighteen months and are in need of supervision but the nurse is preoccupied with other duties. The nurse to resident ratio is 1:33. The nurse has a heavy medication pass in addition to six residents on tube feeding; consequently, there is little time to supervise and/or assist the nursing assistants. There is a nursing supervisor in the building in the evenings but her responsibility involves clinical care instead of nursing assistant supervision. Facility 40; pages 68, 124, 132, 134, 205.*

> *Resident Med 01 has a history of pneumonia and several previous hospitalizations from this nursing facility where she resides on the sub-acute unit. At the time of the site visit the resident has a G-tube and receives tube feeding. Family has requested that staff gets the resident out of bed for a certain period each day. Observations reveal that the resident is clean and groomed, but not out of bed during the weekday shifts. The nursing staff ratio during these shifts is 1:13 equal for nurses, LVNs, and nursing assistants. This sub-acute unit is a heavy care unit with twenty-seven residents, 25 of whom require extensive assistance with activities of daily living. In addition, fourteen residents have tube feeding and seventeen require wound- or stoma care. The floor nurses each care for twenty-seven residents but for a different task; one LVN administers medication, while the other does all the tube feedings. The administrative nurse, ratio 1:27, who supervises the unit during the week, expresses feeling overwhelmed with paper work and indicates there is no time to "help staff". This is corroborated by the study nurse's observations. Facility 10; pages 32, 38, 58, 69, 72, 98.*

The following example demonstrates a special care unit that was adequately staffed and the nursing staff was able to complete all their responsibilities.

> *All residents on the Alzheimer/dementia unit are appropriately dressed, clean and groomed at all times. The unit is clean and free of odors. Residents are toileted. One particular observation involves a nursing assistant assisting a resident with hand washing following toileting, testing the temparature of the water before placing the resident's hands under the faucet, cueing the resident to dry her own hands, allowing the resident to maintain her skill. Similar occurences are observed with other residents. There is sufficient staff available on this Alzheimer/dementia unit. Nurse to resident ratio 1:24 and nursing assistant to resident ratio 1:12. The unit census is twenty-four residents: one requires stoma care, four have nebulizer treatments and*

A call light on the long-term care unit is ringing for at least five minutes. In addition to the unanswered call light, a visitor informs the study nurse who is present for observations that an IV unit is beeping. No nursing staff is available for assistance. The LPN in charge of the unit, the unit manager, and the DON are all in a resident room where a resident is being transferred to the hospital. All nursing assistants assigned to the unit are transferring residents to the dining areas. Facility 14; page 247.

The following example demonstrates a facility that has found ways to proportionately distribute nursing staff during the mealtime peak hours.

This facility has two mealtime sittings. Some residents remain in their rooms; some eat in the dining room. All residents receive individual attention. Response to call lights is immediate during meals and at other times. One nursing assistant remains on the floor during mealtimes to answer call lights and telephones. This allows the other aides to assist the residents with their meals without being distracted and/or interrupted. Nurses also assist with meals and do not distribute medication during these times.
Facility 43; pages 118, 122.

Allocation to Special Care Units

Alzheimer/dementia units in some facilities were at times exclusively staffed with one or more nursing assistants and no licensed nursing staff. This was not unusual for the night shift, but in at least three of the six facilities with an Alzheimer/dementia unit, this was the case for all shifts. In addition, some of these units were monitored by a Social Service Director instead of nursing staff.

In such instances, an LPN from a nearby unit would administer medication to the residents on the Alzheimer/dementia unit. In addition, the nurse was responsible for the residents' medical and/or behavioral needs on this unit. However, the nurses assigned to supervise these units did not observe the special care unit residents on an ongoing basis. The nursing assistants were responsible for observations of any new symptoms and/or changing conditions and communicating these to the nurse in charge. Even though the nursing assistants may be astute in their observations, medical and/or behavioral needs may not be recognized timely and/or timely interventions may be omitted as demonstrated in the following case.

Resident 6 located on the Alzheimer/dementia unit experiences increased edema to the lower extremities. Resident wears Ted hose, but the nursing assistant is unable to put the Ted hose on. The nursing assistant reports this information timely to the nurse who monitors the residents on this special care unit. No apparent assessment of the resident is completed. The lower extremities of this resident are still very edematous two days later. No elevation of legs is observed. This unit is staffed exclusively with nursing assistants. A nurse on the adjacent unit monitors the

residents and administers medication on this special care unit. No follow-up and monitoring by licensed staff of symptoms. Facility 52; pages 6,7, 34, 35, 91, 99.

Many nursing facilities redistributed their available nursing staff when demands on other units necessitated this. Staff from the Alzheimer/dementia units were more likely to be pulled from their location in order to increase staffing levels on other units, most notably the Medicare/sub-acute units. At times, this resulted in the Alzheimer/dementia unit becoming understaffed. Although the risks of compromised resident care when short staffing occurs on the Medicare/sub-acute units were potentially more immediate, care to the residents on the Alzheimer/dementia unit was at times inadequate.

The following case illustrates two negative effects from the redistribution of nursing staff. The Alzheimer unit was left short staffed and in addition, the direct care workers were unfamiliar with the unit, which can be particularly devastating on an Alzheimer unit.

There is a pervasive odor of urine on the Alzheimer/dementia unit throughout one particular Saturday day shift. In addition, many residents look rather unkempt. The study nurse did not observe the unit during breakfast time. However, in the words of the scheduled LPN, "Breakfast time was a mess." The nursing assistants, three of them, were all new to the unit and did not know the residents well. As a result, some residents did not receive the correct diet. Residents were leaving the dining room area before eating and wandered back into the halls or into their rooms, not receiving adequate assistance. The study nurse who observed this unit during other meals notes this confusion does not occur when regular staff is on. Residents are assisted in a more organized manner with regular staff present. Three families complain regarding the resident care provided during this particular weekend. Call-ins on various units in the facility had necessitated staffing changes. This large facility with several long-term care units and one Medicare/sub-acute unit does not use agency staff. Instead, the facility re-allocates available staff, especially from the various long-term care units to the Medicare units. Facility 14; pages 79-83, 110-115, 105-159, 165, 16, 170, 182.

The cases highlighted in this section on staff allocation demonstrate the complex relationship between staffing and the quality of resident care. Inappropriate staff allocation, which negatively affected resident care on particular units and during particular shifts, was but one variable. In addition, short staffing, particularly resulting from staff absences, appeared in some of the examples as an additional contributing factor.

6.3.3 Staff Absences

Many of the visited nursing facilities had hiring needs at the time of the site visit. The few nursing facilities that had no, or very few hiring needs, were either located in rural areas or offered benefits that were attractive for their staff. The benefits ranged from offering day care and free parking space to generous shift differentials for shifts difficult to staff.

male resident begins to shove the resident in the wheelchair. The unit nursing assistant is occupied ambulating another resident in the hall and is unable to come to the dining room. Two other residents are moving and setting tables in the dining room, as the unit is short staffed. One alert resident comments, "You can sure tell it's Sunday: the tables aren't set, the coffee is not here, there's no one in the dining room in case someone falls. It is a law you know." There is one nursing assistant on the unit out of the scheduled three. Facility 55; pages 84-92, 96, 197.

The following case illustrates similarly a short staffing situation due to call-ins. However, even though resident care was negatively affected, the consequences were less serious because the staffing ratio was not as drastically curtailed as in the previous examples.

Many residents remain undressed/ ungroomed until the noon mealtime on one Sunday morning. The Saturday night shift had one nursing assistant call in and cancel her shift. There was no replacement staff member to substitute for this absentee. Because the night shift was working short and not able to complete the same workload, fewer residents are out of bed, groomed and dressed when the day shift arrives. The day shift is able to provide appropriate assistance and has caught up on their work by noon. Facility 2; page 111.

Interviews with staff in many different facilities confirmed that call-ins mainly occurred on the evening and weekend shifts. Even though the study nurses observed several of these instances for themselves, as the above examples indicate, staff members, from floor staff to administrative staff were often more informative as to the extent of these practices. The number of call-ins was reportedly high (occurring almost daily on at least one of the shifts) in at least nine of the visited facilities. Working short staffed because of call-ins did not seem an uncommon occurrence in these facilities.

In at least two facilities, both rated highly by the study nurses, call-ins were only an occasional occurrence. Both nursing facilities employed a combination of management and enforcement practices to achieve this result. One facility offered generous shift differentials for targeted shifts in combination with flexible scheduling. Strict policies regarding call-ins were in place and the facility had very few problems as a result. The DON was not afraid to terminate nursing employees if their performance required this. This facility was located in an urban area where nursing jobs were at a premium. However, this nursing facility had no problems recruiting nursing staff; in fact, it had a waiting list with prospective candidates. All shifts in this facility were fully covered despite the nursing shortage and the facility did not rely on agency staff. The other facility offered tuition reimbursement for nurses, RNs and LPNs, following completion of a certain amount of time on the job. In addition, there was free parking for staff at this urban facility and in-house day care at very reasonable rates. This facility did have infrequent call-ins, and the facility made use of agency and/or support staff (e.g., bath aides) as needed.

free time. Staffing practices encouraging or mandating additional work hours, especially doubles or extra shifts, often resulted in physical and/or emotional tiredness, at times decreased morale, increased numbers of call-ins and staff turnover.

A direct relationship between poor outcomes and the employee's condition as a result of spending extensive and exhaustive hours on the job was difficult to ascertain. Observation did not reveal whether decreased motivation, irritable behavior and/or obvious mistakes were the result of extensive working hours or whether other factors were the cause. Interviews with nursing staff intimated in several instances a direct relationship between poor job performance and tiredness due to having worked double shifts.

In the following example, as relayed by one of the staff nurses on this particular Alzheimer/dementia unit, poor resident care was directly related to the nursing staff working extended hours.

> *One RN, who works in a facility where many nursing staff work Baylor shifts, notes the following, "Nursing assistants are short with the residents, especially the last shift of the four-shift stretch." She states, "The residents get snapped at by nursing assistants when they work too many hours. Residents may be told to 'go away' or 'you've already asked that question'." Facility 14; pages 242-244, 309.*

In the following example the nurse who committed a medication error excused this mistake referring to a previously worked double shift.

> *One LPN, working on an Alzheimer/dementia unit, did not administer AM insulin to a resident who subsequently leaves the facility on pass for a visit with family. The family checks the blood sugar level at home; BS level shows as 400. The family places a telephone call to the facility at some time during the day to inquire why the resident's blood sugar is so high. The LPN realizes that she failed to administer insulin. She states that she "feels terrible", but claims that she is "too tired" after working a double shift. Facility 23; page 58.*

The incident happened in one of the larger facilities where the policy was to use no agency staff. Staff instead were asked to work additional hours/extra shifts. The nursing staff, both nurses and nursing assistants, worked a substantial number of hours, frequently in the form of double shifts.

6.3.6 Supervision

Supervision was defined as leadership activities including the following:

- providing/requesting relevant information including clear instructions regarding standards of care in general and more specifically regarding a residents' status; delegating/allocating work to appropriate unit staff; acknowledging/reprimanding job

performance and enforcing professional standards of care; providing/supporting/ assisting/motivating/encouraging staff when needed.

The presence or lack of adequate nursing supervision was studied on two levels: 1) the facility level where management develops management practices and directives for nursing staff throughout the facility; and 2) the unit level where individual nurses direct the nursing activities of the direct care workers on a day-to-day basis.

Facility-Wide Management

The presence or lack of good leadership on the management level had far reaching consequences. Consistent and adequate supervision on the unit level was accomplished when there was strong involvement of management staff most notably from the Director of Nursing (DON). The DON was in the position to identify and address problems concerning the factors influencing the quality of resident care, be they logistical, clinical or managerial. Good leadership at the facility management level was observed in the four nursing facilities where staff provided good to above average nursing care. Good management consisted of clear guidelines and protocols, adequate training and instruction, evaluation of job performance, and consistent enforcement of policies. Inadequate management on this level did not necessarily result in inadequate provision of care, but it became a matter of individual skills and motivation of nursing staff on the different units.

The following two examples demonstrate how strong management enables the staff to perform good resident care. In this first case, strong leadership from management was evident in their regular presence on the units, their willingness to assist staff when needed and the provision of clear instructions and guidelines. This resulted in a cohesive staff willing to deliver good resident care.

> *Many residents in this nursing facility are at risk for pressure ulcers but only two residents in the long-stay samples had developed pressure ulcers in the previous 90 days. Repositioning is done frequently and timely. In addition, observation showed that nursing assistants assisted ambulatory residents to the restroom for toileting. The residents who have difficulty ambulating are changed every 2-3 hours. When residents wear attends they receive good peri care and regular changes of attends. All staff is truly motivated in this small rural nursing facility. The staff is dedicated to providing excellent care and they succeed to a large degree. The nurses expect a certain level of care from the nursing assistants and the nursing assistants live up to the standards. Management is very involved and often present on the floors. All nursing staff has clear work assignments; specific tasks, such as weighing, vitals etc., are assigned to specific staff on specific days. Assignments are clear and enforced. Good team work, excellent supervision. Quality of resident care rated as above average by study nurse. Facility 13; pages 17-23, 42, 144.*

In this second case, strong supervision from management staff combined with excellent staff training resulted in good staff performance.

In one nursing facility, with a sub-acute isolation unit, mainly for isolation of residents with MRSA, VRE, UTIs, and URIs, most of the residents are admitted with hospital-acquired infections. There is a very strong focus on isolation techniques and excellent monitoring and enforcement. Prevention and screening for infection is adequate, hand washing is consistent, gloves are worn, and antiseptic dispensers are located throughout the facility. Administration/Infection Control provides educational programs to teach staff proper isolation techniques and the facility provides in-services related to isolation precautions for families and friends. Strict policies are in place to enforce compliance with infection control. Anyone who is observed not washing hands or not wearing gloves can be terminated on the spot. Facility has implemented a tracking and trending program for infections. Facility 11; pages 24-26, 39-40, 74, 105, 126, 132, 139, 143, 144.

Unit Management

Supervision of direct care nursing staff influencing the quality of provided care were most effective when carried out on the units. It was on this level that an insufficient adherence to proper procedures, insufficient implementation of care plans, and inappropriate staff-resident interaction could be noticed immediately and corrected. However, the nurses who were assigned with the supervising tasks were often not in the position to provide the needed guidance. Floor nurses, and charge nurses who were mostly in the position of observing what was actually happening with resident care had their own assignments, which involved administering medication and/or providing treatments. Unit managers, who often did not provide direct resident care, had multiple responsibilities from case management to nursing staff management. Faced with their own task the nursing staff on the units often ignored their supervising responsibilities. This was partly due to nursing staff levels as discussed in an earlier section. However, supervising nursing staff on the units differed considerably in their ability to lead their staff.

The following two cases, both recorded in the same nursing facility but on different units, highlights how differences in supervisory skills of the individual nurses in charge, directly affected the quality of care. Inadequate supervision in the first case resulted in poor quality of care. The second case illustrates the positive effects of good nursing supervision.

Female resident XX on the long-term care unit is calling out for help repeatedly. There is initially no response from staff. In addition, many call lights are ringing. The unit manager (in the facility on his day off to catch up on paperwork), the charge LPN and three nursing assistants are all gathered at the nurses' station, visiting with each other. It takes about ten minutes before the LPN directs a nursing assistant to find out who is calling. The nursing assistant reports that resident XX is short of breath, sweaty and "looks kind of gray". The LPN instructs the nursing assistant to do a pulse O2. The nursing assistant completes this as instructed. Pulse O2 is low (82%). The LPN meanwhile has not left the nurses' station and gives no indication that she will act on this information. The nursing assistant becomes angry, confronts the LPN and tells her, "Do something." The nurse then calls the physician without

performing a resident assessment herself. The MD gives new orders for O2 to titrate to 90%, stat CBC and a chest X-ray. The nursing assistant in the meantime has taken appropriate action to relieve the resident's discomfort (HOB elevated). She continues to check on the resident and responds to call lights. Facility 23; pages 19, 113-116.

It was not clear what the reasons were for this inappropriate response to resident needs on the part of the LPN and some nursing assistants. This was a weekend shift and several of the workers had performed one or more double shifts in the previous seven days. However, this was similarly the case on the sub-acute care unit where an RN was present as a supervisor on the same shift. Her performance as a nurse and as a supervisor was quite the opposite and the resulting resident care was similarly different.

Response to call lights is timely on the Medicare unit during the weekend evening shift. All nursing assistants are providing care as needed. The RN on duty is informed by a family member that one resident has edema to the lower extremities. The RN notifies the family member that she has already placed a call to the resident's physician and is awaiting a return call. The nurse informs the family that she will place a repeat call to the MD if she does not receive a return call in the next thirty minutes. The MD calls within the designated period and gives new orders for care. The RN informs the family and instructs the nursing assistant as to the new interventions. This RN is clearly in charge: communicative with nursing assistants and family members, aware of the resident's condition, performing timely assessments and responding appropriately. As a result, the resident receives good care. Facility 23; page 132.

Inadequate supervision on the unit level often resulted in poor implementation of individual resident care plans, clinical guidelines and/or protocols, and unresponsiveness to residents' needs. When adequate supervision on the units was insufficient or lacking, the provision of high quality care rested solely with the individual *nursing assistants*, who were sometimes up to the task and sometimes not.

Resident 13 who resides on the Alzheimer/dementia unit has been noted with a weight loss of 13 lbs. since admission. Care plan interventions specify: carnation with all meals, ice cream with lunch and dinner, and high caloric snacks TID. The resident does not receive carnation with lunch as per care plan, ice cream is offered but the resident refuses. The nursing staff does not encourage the resident to increase his meal intake. The resident consumes just 25 % of his lunch. During this meal, one LPN is on the unit distributing medication. No supervision of nursing assistant staff is observed nor does the nurse give any indication that she is aware of the care plan instructions for this particular resident. Facility 15; pages 74-77, 82, 84.

Management Tools, Protocols, and Standards

Even though nurses who functioned in a supervisory capacity differed in their skills to lead, enforcement of good care practices did not always require their active involvement. Supervision on the unit level was most effective when a system was in place where staff was reminded to accomplish a task and where the supervisor could easily verify its completion. The systems can be more or less sophisticated but they always involved a situation where expectations were clear, standards of care were explicit, and practice guidelines were available. It is at this point that management staff can be important but this is not necessary.

The following example was recorded on a unit where the nursing supervisor did not particularly engage in apparent supervision. The unit, however, ran smoothly and the residents all received good nursing care.

> *All residents on the Alzheimer/dementia unit are appropriately dressed, clean and groomed at all times. The unit is clean and free of odors. The nursing assistants are observed assisting the residents with hand washing following toileting. A bathlist is posted on the unit and baths are signed off by the nursing assistantss when completed. If a resident refuses on a scheduled bath day, another nursing assistant tries at a later time, if the resident then still refuses the next shift tries. The unit coordinator does not accept postponement of scheduled baths to the next day, the next shift is okay. Nursing assistants are experienced in working with Alzheimer residents; they are observed testing the water temperature before placing a resident's hands under the faucet, cueing a resident to dry her own hands, allowing the resident to maintain skill. There is sufficient staff available on this special care unit. The nurse to resident ratio is 1:24 and the nursing assistant to resident ratio 1:12. The ratios are the same on the day and evening shift, during the week and weekends. The staff is well trained and has tenure between three to five years. Few occurrences of supervision are observed. However, expectations are made very clear, and tools are in place to facilitate easy implementation and enforcement. Facility 17; pages 26-29.*

In the next example management found a strategy to increase the likelihood that staff delivered resident care as expected. Observations revealed that this was an effective method.

> *In this large nursing facility with a sub-acute isolation unit expectations are made very clear. Staff is well trained and family and friends are in-serviced on isolation precautions. Implementation of good care practices is reinforced in several ways. Good hand washing is performed consistently by nursing staff. Soap containers placed throughout the facility are monitored to ensure they are used. Gel dispensers are located on all the halls. Every two hours TEA-time (turn, evaluate and assess) is announced over the loudspeaker reminding the nursing staff of their task. As a result, residents are assessed and repositioned every two hours, even though, this may require staff to don masks and gloves. In addition, a routine for feeding is established ensuring that all residents are fed. Staff performs well in general. The*

facility is highly rated by the study nurse. Facility 11; pages 25, 26, 59, 105, 126, 132, 139.

Management Training

During interviews, nurses in different professional capacities expressed that they did not feel prepared to supervise or that they felt uncomfortable in that role. In general, the nurses expressed that they did not feel adequately trained. Training on issues of management appeared to be lacking from their professional educational background.

Most nursing facilities did not provide additional training in the form of in-services on the subject. The topic might have been addressed in one-on-one training sessions that some facilities did offer their staff. In only one facility, where supervision was in general very good and resident care was equally above average, both the DON and a unit manager raised the subject of inadequate training.

> *The DON in an interview with the study nurse indicates, "I observed inadequate supervising skills with nursing staff and I began mentoring and training nurses to supervise." The DON further observes, "This skill is not taught in school and many nurses do not know how to provide adequate and effective supervision. Nurses need to learn how to assume and stay in a supervising role and not assume the role of buddy with staff." That this DON apparently had put her words into practice is reflected in a statement by one of the unit managers in the same facility who indicated that the DON taught her all she knows about supervising. Facility 52; page 17.*

Given the relative importance of adequate supervision of nursing staff on the quality of resident care, training on this subject received disproportionately little attention.

6.3.7 Nursing Skills, Expertise and Training

Nursing skill, knowledge and expertise were important factors in the provision of adequate resident care. They influenced the nurses' ability to identify problems, provide timely notification, and intervene appropriately. The assessment skills of all nursing staff, and ancillary disciplines, contributed to a positive or negative quality outcome for the resident.

Nurses relied in many instances on the observation skills of the nursing assistants for early identification of problems or changes in residents' status. In the case studies, nursing assistants frequently reported early symptoms in a timely fashion, however the nurses, LPN or RN, did not always follow up with an appropriate assessment of the reported symptoms. In addition, nurses did not always recognize the symptoms or the seriousness of the symptoms. Thus, the appropriate disciplines would not be notified and timely interventions did not occur.

The following two cases illustrate the importance of communication among nursing staff and between disciplines in the assessment of potentially important symptoms.

Resident S15 has a history of CHF and CRF. The aides on the long-term care unit where the resident is residing note changes to urine color and output, indicating a possible UTI. The nursing assistants report these findings to the LPN who shows the urine to the MD that same day. A C&S is ordered immediately. Good observations by nursing assistants, good communication among nursing staff and between disciplines. Facility 40; pages 99 and 102.

Resident N16 with a diagnosis of CHF resides on the long-term care unit. The resident had a 10 lb. weight gain in the past ninety days. This weight gain is noted by dietary, not by nursing, however nursing noted an increase of edema to the resident's lower extremities. The resident is on Lasix. During a care conference observed by the study nurse, nursing did not indicate awareness of the resident's weight gain, but did notice increased leg edema. Dietitian is not present during care conference. There is evidence of inadequate nursing assessment by not reviewing the weight of this resident. Dietary assessment was adequate, but the communication between the nursing and dietary departments is inadequate. Facility 55; pages 40, 42, 110, 114, 132-134.

Assessment of Acute Illness or Changes in Health Status

Recognition, accurate interpretation and a timely response to early symptoms are of significant importance for the Rehospitalization quality measure. Good nursing assessment skills (or lack there-of) often made a substantial difference in the resident outcome. The following three cases illustrate a lack of assessment skills and knowledge on the part of nursing staff.

Resident LTC07 residing on the long-term care unit has difficulty breathing during one evening meal. The symptoms are reported by the nursing assistant to the charge LVN in a timely fashion. The LVN on duty on the unit that evening proceeds with an auscultation of the lungs and determines that "it is just in the throat". The LVN does not report the symptoms to the physician or the RN house supervisor and, in addition, fails to document the episode in the records. A visiting PA who is in the facility on routine visits the following morning (Saturday) orders nebulizer treatments. The PA orders specify to notify the PA in case of any further wheezing. Even though the LVN had apparent ER experience, her interpretation of this resident's symptoms was clearly insufficient. Facility 13; pages 73-91.

Resident SAC 5 on the long-term care unit was noted with a harsh productive cough and fever of 101F. No further nursing documentation until the MD, who is in the facility for a routine visit one-week later, orders a chest X-ray. The chest X-ray is positive for pneumonia. The resident is sent to the ER and admitted. A new RN, who is still orienting in the facility, reported the initial symptoms but the regular staff failed to follow-up with a nursing assessment and/or monitor the resident. Facility 55; page 61.

Resident 210 on the long-term care unit was sent to the ER for a suspected GI bleed, which was confirmed in the hospital. The resident returned to the nursing facility. Upon return, the facility nurses (ADON, RN and LPN) review the hospital records and express that they are not certain what the lab values mean. A resident assessment is delayed until forty-five minutes after the resident's return from the hospital. The oncoming evening nurse completes the assessment. The evening nurse instructs a nursing assistant to check on the resident "every 30-45 minutes" and "get vitals pretty soon". In this case, there is inadequate assessment of a resident following an acute episode in addition to heavy reliance on nursing assistants for monitoring of the resident. There is clear evidence that the nursing staff has inadequate knowledge regarding lab values. The staff in this facility seems not prepared for higher acuity residents. There is no sub-acute care unit in facility. Facility 15; pages 41-43, 113-114.

Management staff in many nursing facilities readily acknowledged the lack of adequate assessment skills on the part of the licensed nursing staff. In staff interviews, the DON or Staff Development Coordinator (SDC) would often comment on this factor. However, few facilities targeted this specific area of concern on a regular basis in their in-service sessions. Some facilities provided one-on-one training session to address specific training issues with an individual staff member. It was not clear how frequently nurses' assessment skills were the topic in these sessions. One facility did institute in-services for licensed nursing staff to improve their assessment skills. These 'head to toe assessment' in-services as they were called would be offered as an on-going course to newly hired nurses and were mandated for currently employed licensed nursing staff.

Expertise in Managing Cognitively Impaired Persons

Expertise and skills of the nursing staff were also important in dealing with cognitively impaired residents. Expertise of all staff had a major impact on the resident outcome. This was especially apparent for the quality areas Resisting Care and Unclean/Ungroomed.

The following two cases illustrate how staff-resident interactions affected resident responses.

Resident XY is observed to be calling out for forty-five minutes, "Help me, help me." The only staff intervention involves the nursing assistants making reassuring statements in passing, however the intervention is ineffective. After forty-five minutes, a nurse offers the resident a tape player and headphones. The resident stops calling. There is a clearly insufficient application of appropriate intervention techniques on the part of the nursing assistants and a lack of timely intervention on the part of the nurse. Facility 43; pages 148-149.

Resident 14 who lives on the special care unit wants to scoot the chair along the floor during mealtime, removing himself from the table. The staff repositions the resident's chair twice. which causes the resident to become irritated. The staff takes some time with the resident and redirects his attention. The resident then loses interest in wanting to

move from the table and forgets his irritation. Staff uses behavior intervention techniques appropriately and avoids escalating behaviors while still accomplishing the goal to allow the resident to eat at the table. All staff on the special care unit is specially trained. During the site visit, arrangements were made for all nursing staff on the special care unit to attend an Alzheimer conference. Management allowed half of the unit's nursing staff to attend per day so that the unit remained staffed with faces familiar to the residents. In addition, the facility provides special training to staff on special care unit. Facility 17; pages 43, 28.

Training

A fair amount of staff training was provided in the visited facilities. All nursing facilities did provide in-services at least monthly. These in-services were provided for the general nursing home staff and included topics that are important for all staff, such as fire safety and infection control. Few nursing facilities provided only monthly training. A majority of the facilities offered additional in-services specifically for nursing staff in which more facility specific issues were addressed. The topics ranged from preparing for a survey to more nursing specific topics such as pain management, vital signs, and dysphagia. In few facilities, these training sessions included some managerial topics such as teamwork, conflict management. Strong emphasis was placed on training and education in the facilities where the study nurses rated the care as above average. However, even in those facilities, the DONs expressed that training for licensed nursing staff could improve. Insufficient attention appeared to be given to the particular training needs of specific nursing disciplines. These training needs were greatest for the licensed nursing staff and included the training of supervisory staff in management techniques and the training of licensed staff in nursing assessment skills.

6.4 Conclusion

The case studies revealed that the quality of resident care in nursing facilities was clearly influenced by nursing staff levels. The observed ratio of direct care nursing staff (RNs, LPN/LVNs, CMAs, and nursing assistants) to residents on a particular unit at a particular time was frequently a determinant of the observed quality of care provided to particular residents. More specifically, quality of care concerns were found if nursing staff levels fell below reasonable thresholds; staff was simply physically unable to provide all the residents with the required care and/or adequately monitor all the residents. This finding argues for the importance of some minimum staffing ratio to protect nursing home residents

If nursing staff levels were above the minimum necessary levels, quality of care varied. With adequate staffing levels, the quality of resident care was still compromised in certain nursing facilities, but not in others. Variation in quality of resident care appeared to reflect management practices related to the allocation of nursing staff and short staffing, as well as supervision related to implementation of clear resident care protocols, and staff training and development. These findings suggest that to optimize the value of available nursing home staff, we should also address staffing issues beyond minimum nurse staffing levels.

Three issues regarding allocation of nursing staff appeared to contribute to the quality of resident care: (1) the availability of ancillary, management and support staff (e.g. restorative, activity, and housekeeping staff); (2) the distribution of available staff during peak hours; and (3) the allocation of staff to the Alzheimer/dementia units. Ancillary, support, and management staff were present in greater numbers on the day shifts during the week. These staff members relieved the direct care nursing staff of a portion of their duties, enabling nursing staff to take more time with residents and to monitor residents more closely, averting potential quality of care concerns. Inadequate care when observed during the evening and weekend was partly attributed to the fact that fewer non-nursing care staff were available during these times. Allocating nursing and non-nursing staff during peak hours based on resident needs directly affected the quality of resident care. Solutions at some facilities included: designating one staff member solely to answer residents' call lights, allowing multiple mealtime sittings, and assigning nurses to monitor the dining rooms instead of administering medications during these times. Nonetheless, in many nursing facilities such practices were not instituted.

Allocation of nursing staff to Alzheimer/dementia units was a concern in some nursing facilities. Licensed nursing staff were not present on a continuous basis on the Alzheimer/dementia units; a practice that was routine during the night shift in almost all nursing facilities. However, in some nursing facilities there was no licensed nurse present on the Alzheimer/dementia unit on any shift, other than to administer medications and when called upon for medical and/or behavioral concerns or emergencies. Without licensed nursing staff, nursing assistant supervision was limited and residents were not well monitored such that emerging medical concerns were missed. Another staffing issue occurred on the Alzheimer/dementia unit when short staffing in other parts of the nursing facility necessitated a redistribution of nursing staff. All types of nursing staff from the Alzheimer unit were more likely to be pulled in order to increase staffing levels on other units, most notably the Medicare/sub-acute units, at times leaving the Alzheimer/dementia units significantly under-staffed.

Absenteeism or call-ins often exacerbated chronic nursing shortages; a situation that occurred particularly for nursing assistants on the night, evening, and weekend shifts. Working short staffed, with less than the routinely scheduled nursing staff often resulted in poor resident care. Different areas of care were compromised under these circumstances, but most likely the more difficult and/or time consuming tasks were targeted for omission. Preventive care such as repositioning and toileting, dental hygiene, mealtime assistance and/or supervision, the provision of activities were the areas most frequently omitted by nursing assistant staff. Nurses were often not able and in some instances appeared unwilling or unmotivated to provide the nursing assistants with additional help. When the licensed nurses were short staffed, they often concentrated on their immediate direct care nursing tasks and simply omitted supervisory responsibilities. Chronic short staffing due to absenteeism had a negative effect on staff motivation, conceivably resulting in staff vacating their positions.

Requesting or mandating that the nursing staff work additional hours was a frequently used management approach to deal with short staffing. This might include extra hours added on to shifts, extra shifts not routinely scheduled, double shifts, or Baylors (back to back double shifts). This practice appeared to eventually backfire especially when many of the nursing staff worked an extensive number of additional hours or worked additional hours on a regular basis. Staff motivation declined in some cases and job performance often deteriorated leading to quality problems or compromised staff-resident interactions when staff became irritable and/or tired. In addition, nursing staff tended to call in more frequently when over-committed, continuing the short staffing cycle.

More than a third of the visited facilities opted to use agency staff in order to deal with short staffing situations. Of the facilities using agency staff, four did so on a regular, almost daily, basis. In facilities where regular staffing with agency personnel occurred, the same staff was requested on a repeat basis in an effort to provide some continuity of care. In general, job performance of agency staff appeared to match the job performance prevailing on the units where they worked. Agency staff did not generally stand out one way or the other; if the regular nursing staff did a good job, so did the agency staff, and vice versa. This finding was contrary to the negative perception of agency staff by many nursing facility staff, whether they worked with them or not. Negative perceptions at times involved applying higher standards to agency staff than regular staff. However, regular staff working with agency personnel sometimes expressed being 'burdened' by agency staff because they had to answer more questions to orient the agency worker to residents' needs or the facility's care procedures. This appeared to be a valid complaint, particularly when agency staff did not receive special orientation or were not accommodated with relevant additional information regarding the resident status or unit proceedings.

Management in some facilities were able to respond effectively to temporary short staffing conditions. In some facilities management staff assisted with resident care, not only improving quality but boosting morale. Of the several possible responses to deal with conditions of chronic understaffing in a nursing facility, it appeared that the use of agency staff created fewer quality of care concerns for the residents in the visited nursing facilities than nursing staff working extensive and/or frequent additional hours, or working short staffed.

Good management and supervision of the nursing staff were essential to providing high quality care. Good managers/supervisors provided clear and fair guidelines/policies, clear instructions and expectations regarding the standards of care, available material and staffing resources to allow easy implementation of these standards, and consistent follow-up and enforcement of these standards. Strong leadership at the facility management level, especially from the DON, was often associated with good staff morale and good quality of care.

If leadership from facility management was weak and/or divided, resident care was more likely to be compromised. With insufficient or inadequate leadership from facility

management, supervision on the unit level became more important. Charge nurses and unit managers showed varying capacities to lead and supervise their direct care staff. If strong leadership was present on the unit level, it had a significant positive effect on the quality of resident care. However, nurses in a charge position on the unit level frequently did not show evidence of leadership. In many instances, the nurses were too preoccupied with their own tasks to be able to provide adequate supervision; they were too busy completing administrative tasks and/or administering medications. In some instances, the nurses clearly lacked the skills; this was apparent from observations and by their own admission.

As we would expect, quality of resident care was influenced to a large extent by the expertise, skills and knowledge of the individual direct care nurses. Nurses' assessment skills were at times insufficient, leading to poor recognition or misinterpretation of relevant symptoms, such that appropriate follow-up did not occur in a timely manner. Although these assessment skills can help avert hospitalization, nursing facilities often did not provide specific training for nurses to develop these skills. One area where staff expertise and knowledge is especially important is in the interaction with cognitively impaired residents. Good interaction skills seemed to reduce incidents of resistance to care and agitation on the part of the residents. Some staff seemed to possess the skills to interact appropriately with cognitively impaired residents, however more training in behavior modification and management techniques appeared to be required.

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